North Dakota Nursing Needs Study: Demand in Healthcare Facilities

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Introduction

The Health Resources and Services Administration (HRSA), has predicted that North Dakota (ND) will face a shortage of Registered Nurses (RN) in 2005 (HRSA, BHPr., 2002). However, HRSA's 2005 prediction may not take into consideration the rural nature of ND. In addition, this prediction disregards Licensed Practical Nurses (LPN). Anecdotal evidence has suggested that there is a current need for licensed nurses in ND. To investigate the specific nursing needs of ND, the Nursing Needs study was mandated by the ND state legislature and was funded by the ND Board of Nursing. The study was designed and implemented with three primary goals: 1) provide a more accurate picture of the RN and LPN workforce in both rural and urban areas of ND, 2) compare these data with existing national data, and 3) inform policy. The preliminary data presented here address two of the primary questions posed for study: One, is there a shortage of registered nurses and licensed practical nurses in ND? Two, if there is a shortage, what are the characteristics of the shortage, in terms of severity, types of affected facilities and geographic distribution?

Methodology

The Healthcare Facilities Survey was developed using two national surveys and a ND survey as reference guides. It was then refined into five variants, each variant was appropriate to one of the types of facilities to be surveyed. The survey was then mailed to hospitals (N=47), long-term care facilities (N=125), clinics (N=286), public health facilities (N=28), and home health facilities (N=41) in ND. A second mailing took place approximately one month after the return deadline for each of the five surveys. Surveys were sent to a total of 527 facilities. Data were collected for all returned surveys and entered into SPSS. Descriptive statistics were calculated for each facility type and each geographical region. Regions were defined using a modified three tier Urban Influence Code. Urban Influence Codes are a method of classifying U.S. counties according to the size of metropolitan areas, proximity to metropolitan areas and the population of the largest city within the county (Ghelfi & Parker, 1997). Vacancy rates were calculated: Vacancy rate is defined as the average number of vacant full-time employee (FTE) positions divided by the average number of budgeted FTE positions for the same year. (AONE, 2002).

Abstract

The Nation is experiencing an ever-increasing shortage of nurses. North Dakota (ND) is facing this challenge by collecting data on the extent of and the implications of the nursing shortage in ND. To this end, the Nursing Needs study was mandated by the NDCC Nurse Practices Act 43-12.1-08.2, in which the ND Board of Nursing was directed to address the issue of supply and demand for nurses. Surveys were sent out to directors of Clinics, (n = 286), Hospitals (n = 47), Long-term Care Facilities (n = 125), Public Health Facilities (n = 28), and Home Health Facilities (n = 41) in ND. The data from returned surveys indicate that many counties in ND have vacancy rates over 6% at one or more of the 5 types of facilities above; 6% has been determined to be the level of vacancy indicative of shortage (Moulton, Park, Muus, Wakefield, Henderson, 2002). In ND 39.62% of all counties are experiencing a shortage of licensed nurses (i.e. RN or LPN). When counties are divided into Rural (n=29), Semi-rural (n=20), and Urban (n=4) categories the percentage of counties experiencing a shortage is somewhat disproportionate: 31%, 45%, and 75% respectively. The description and the implications of the current nursing shortage are discussed in detail.

		Home Health			Public Health			Long-term Care			Hospitals		
Urban Counties	**Clinics**	**RN**	**LPN**	**RN**	**LPN**	**RN**	**LPN**	**RN**	**LPN**	**RN**	**LPN**	**RN**	**LPN**
Burleigh	18	1.04%	0.51%	3	0.00%	0.00%	1	0.00%	0.00%	8	0.00%	1.13%	1	0.00%	0.00%
Cass	13	0.00%	0.00%	3	0.00%	0.00%	0	-- --	-- --	4	**13.01%**	4.74%	3	3.87%	3.56%
Grand Forks	5	0.84%	2.74%	2	2.30%	0.00%	1	**17.89%**	0.00%	4	1.25%	1.79%	3	**8.33%**	**11.32%**
Morton	2	0.00%	0.00%	0	-- --	-- --	1	0.00%	0.00%	2	0.00%	**22.22%**	0	-- --	-- --
Semi-rural Counties															
Barnes	1	0.00%	0.00%	2	0.00%	0.00%	0	-- --	-- --	3	0.00%	0.00%	1	4.24%	0.00%
Bottineau	1	0.00%	0.00%	2	0.00%	0.00%	0	-- --	-- --	1	0.00%	0.00%	1	0.00%	0.00%
Emmons	1	0.00%	0.00%	1	0.00%	0.00%	1	0.00%	0.00%	1	**58.82%**	5.45%	1	0.00%	0.00%
Grant	3	0.00%	0.00%	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --	1	0.00%	0.00%
Kidder	2	0.00%	0.00%	0	-- --	-- --	1	0.00%	0.00%	0	-- --	-- --	0	-- --	-- --
McLean	5	0.00%	0.00%	0	-- --	-- --	0	-- --	-- --	1	0.00%	0.00%	2	0.00%	0.00%
Mercer	1	0.00%	0.00%	0	-- --	-- --	0	-- --	-- --	1	0.00%	0.00%	1	0.00%	0.00%
Nelson	1	0.00%	0.00%	0	-- --	-- --	1	0.00%	0.00%	3	0.00%	1.33%	1	0.00%	0.00%
Oliver	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --
Pierce	1	0.00%	0.00%	1	0.00%	0.00%	0	-- --	-- --	2	0.00%	0.00%	1	**17.39%**	0.00%
Ramsey	2	0.00%	4.17%	1	0.00%	0.00%	1	0.00%	0.00%	4	0.00%	0.00%	1	**10.00%**	**7.69%**
Ransom	4	0.00%	0.00%	1	0.00%	0.00%	1	0.00%	0.00%	1	0.00%	0.00%	1	0.00%	0.00%
Richland	2	0.00%	0.00%	1	0.00%	0.00%	1	0.00%	0.00%	2	0.00%	0.00%	0	-- --	-- --
Stark	3	0.00%	0.00%	1	0.00%	0.00%	0	-- --	-- --	3	**8.93%**	5.25%	2	**33.33%**	**50.00%**
Steele	0	-- --	-- --	0	-- --	-- --	1	0.00%	0.00%	0	-- --	-- --	0	-- --	-- --
Stutsman	2	0.00%	0.00%	1	0.00%	0.00%	1	0.00%	0.00%	5	2.48%	3.33%	1	**8.82%**	4.17%
Trail	1	0.00%	0.00%	0	-- --	-- --	1	0.00%	0.00%	3	**16.67%**	0.00%	2	**8.33%**	0.00%
Walsh	1	0.00%	0.00%	0	-- --	-- --	1	**50.00%**	0.00%	2	0.00%	0.00%	1	0.00%	0.00%
Ward	7	**14.29%**	2.86%	0	-- --	-- --	1	0.00%	0.00%	5	0.77%	0.71%	1	5.03%	0.00%
Williams	7	**14.29%**	0.89%	1	0.00%	0.00%	1	0.00%	0.00%	4	**6.67%**	4.08%	2	**41.84%**	0.00%
Rural Counties															
Adams	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --	1	0.00%	0.00%	1	0.00%	0.00%
Benson	2	0.00%	0.00%	0	-- --	-- --	0	-- --	-- --	1	0.00%	0.00%	1	**7.86%**	0.00%
Billings	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --
Bowman	1	0.00%	0.00%	0	-- --	-- --	0	-- --	-- --	1	0.00%	0.00%	0	-- --	-- --
Burke	2	0.00%	0.00%	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --
Cavalier	0	-- --	-- --	0	-- --	-- --	1	0.00%	0.00%	3	**35.10%**	3.03%	1	0.00%	0.00%
Dickey	1	0.00%	0.00%	1	0.00%	0.00%	1	0.00%	0.00%	3	0.00%	0.00%	0	-- --	-- --
Divide	1	0.00%	0.00%	0	-- --	-- --	0	-- --	-- --	1	0.00%	0.00%	1	0.00%	0.00%
Dunn	2	0.00%	0.00%	0	-- --	-- --	0	-- --	-- --	1	0.00%	0.00%	0	-- --	-- --
Eddy	3	2.45%	**8.33%**	0	-- --	-- --	0	-- --	-- --	1	**21.43%**	**8.00%**	0	-- --	-- --
Foster	1	**7.35%**	**25.00%**	1	**7.14%**	0.00%	0	-- --	-- --	2	0.00%	0.00%	1	0.00%	**25.00%**
Golden Valley	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --
Griggs	2	**7.55%**	**11.63%**	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --
Hettinger	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --	1	0.00%	0.00%	0	-- --	-- --
Lamoure	3	0.00%	0.00%	0	-- --	-- --	0	-- --	-- --	3	0.00%	0.00%	0	-- --	-- --
Logan	0	-- --	-- --	0	-- --	-- --	1	0.00%	0.00%	2	0.00%	0.00%	0	-- --	-- --
McHenry	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --	1	0.00%	0.00%	0	-- --	-- --
McIntosh	4	0.00%	0.00%	2	0.00%	0.00%	1	0.00%	0.00%	2	**25.00%**	**50.00%**	2	**45.00%**	**12.50%**
McKenzie	1	0.00%	**50.00%**	2	0.00%	0.00%	0	-- --	-- --	1	0.00%	0.00%	2	0.00%	0.00%
Mountrail	2	**16.67%**	**50.00%**	0	-- --	-- --	0	-- --	-- --	2	**20.00%**	0.00%	1	0.00%	0.00%
Pembina	2	0.00%	0.00%	0	-- --	-- --	1	0.00%	0.00%	0	-- --	-- --	1	0.00%	0.00%
Renville	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --	1	0.00%	0.00%	0	-- --	-- --
Rolette	1	0.00%	0.00%	1	0.00%	0.00%	0	-- --	-- --	2	**16.67%**	**16.67%**	1	0.00%	0.00%
Sargent	0	-- --	-- --	0	-- --	-- --	1	0.00%	0.00%	0	-- --	-- --	0	-- --	-- --
Sheridan	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --
Sioux	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --
Slope	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --	0	-- --	-- --
Towner	1	0.00%	0.00%	0	-- --	-- --	1	0.00%	0.00%	0	-- --	-- --	0	-- --	-- --
Wells	0	-- --	-- --	1	0.00%	0.00%	1	0.00%	0.00%	1	0.00%	0.00%	1	0.00%	0.00%

Figure 1: Vacancy Rates by County Across Facility Type. NOTE: Numbers presented in RED indicate a shortage of 6% or greater in that area.

Results

These preliminary findings are based on surveys returned to the Center for Rural Health. Return rates were: **85%** of **hospitals** (*40*/47); **71%** of **long-term care facilities** (*89*/125); **39%** of clinics (*112*/286); **82%** of **public health facilities** (*23*/28); and **68%** of **home health facilities** (*28*/41) in ND. A **total return rate** of **55%** (*292*/527) was obtained across all facilities. A vacancy rate of six percent has been determined to be the level indicative of shortage (Moulton, Park, Muus, Wakefield, Henderson, 2002). Findings from the Healthcare Facilities Survey indicated that vacancy rates for licensed nurses exceeded six percent at one or more facilities in many ND counties (see Figure 1). In fact using the six percent criteria, **39%** (*21*/53) of all counties in ND were experiencing a shortage of licensed nurses (i.e. RN or LPN). When the 53 counties were divided into **Rural (n=29)**, **Semi-rural (n=20)**, and **Urban (n=4)** categories, the percentage of counties experiencing a vacancy rate of six percent or above is disproportionate: **Rural 31%**, **Semi-rural 45%**, and **Urban 75%** respectively (see Figure 1). However, the semi-rural hospitals are experiencing the highest average levels of vacancy at 12.5%, followed by rural hospitals (7.5%) and urban hospitals (5%) respectively.

Discussion

According to economists, a full workforce in most industries exists when vacancy rates do not exceed six percent: A shortage is considered to be present when a vacancy rate is sustained above this level. Nationally, according to the AHA, the average RN hospital vacancy rate is 15%. The AONE (2002) study reported a nation wide vacancy rate for RNs in hospitals of 10.2%. The preliminary findings of this research demonstrated an average RN vacancy rate of 10% among hospitals across all regions of ND. The imbalance is broadest in urban counties (75%); however, urban hospitals had an average RN vacancy rate of only 5.23%. Rural hospitals had an average RN vacancy rate of 7.53% across a narrower group of facilities (31%). The semi-rural hospitals have an average RN vacancy rate of 12.45% across nearly half (45 %) of facilities. The vacancy problem seems especially dire in the semi-rural areas of ND. The urban and rural areas of ND are also hit by vacant positions, however; semi-rural communities seem to be taking the brunt of the shortage. Although when compared to the national average the state does not seem to be experiencing a shortage of RNs, many areas are especially hard hit with vacancy rates as high as 58.82% for RNs and 50.00% for LPNs (see Figure 1.). It is clear that, throughout the state, there are many areas of imbalance in supply and demand of licensed nurses.

References

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This study was mandated by the NDCC Nurse Practices Act 43-12.1-08.2